CLAIMS

1.   Method for locating a terminal (T) in a local wireless
telecommunications network (N) comprising a plurality of base
stations (APn) that provide services on respective coverage
areas, adapted to provide a location estimation of the
terminal (T) depending on a set of configuration data and on
a set of measuring data indicating whether the terminal (T)
belongs to a subset of said coverage areas and acquired from
terminal (T) or network (N),
        characterised in that it comprises:
        defining a set of configuration data comprising a
plurality of configuration data bases, each one having a
respective weight function;
        defining a set of measuring data comprising a plurality
of measuring types, depending on the type of terminal;
        associating,   through   different   combinations   of
configuration data bases and measuring types, respective
locating procedures that correspond to accuracy values of the
location estimation; and
        selectively actuating at least one locating procedure
obtained from said associating step.

2.   Method according to Claim 1, characterised in that said
step of selectively actuating comprises a step of selecting a
locating procedure depending on a set of available measuring
data and on a prefixed accuracy threshold value of the
locating estimation, in such a way that said procedure has an
accuracy value that is not less than the prefixed threshold
value, minimising the weight function of the configuration
data base.

3.   Method according to Claim 1, characterised in that said

step of selectively actuating comprises a step of selecting a locating procedure depending on a set of available measuring data and on a prefixed set of available configuration data, in such a way that said procedure has the best possible accuracy value of the location estimation.

4.   Method according to Claim 1, characterised in that said step of selectively actuating comprises a step of selecting a locating procedure depending on a set of available measuring data and on a prefixed set of available configuration data, in such a way that said procedure has the best response speed to the location estimation request.

5.   Method according to Claim 1, characterised in that said step of selectively actuating comprises a step of selecting a locating procedure depending on a set of available measuring data and on a prefixed set of available configuration data, in such a way that said procedure has a pricing value in compliance with a value predefined by the user.

6.   Method according to any one of the previous Claims, wherein said set of configuration data comprises at least one data base among a plurality of data bases related to:
        - locating coordinates of the base stations (APn); '
        - radio-electric characteristics of the network (N);
        - structural and/or electromagnetic characteristics of the environment in which the network (N) is deployed;
        - radio-electric or performance parameters of signals transmitted from the base stations (APn), in predetermined space positions belonging to the coverage area of the network (N).

7.   Method according to any one of the previous Claims,

wherein said set of measuring data acquired by terminal (T) or network (N) comprises at least one type of data among a plurality of types of data related to:

 - identification of the base station (AP1) by which the terminal (T) is served;

 - identifications of the base stations (AP2, AP3) received by the terminal (T);

 - at least one radio-electric or performance parameter of signals transmitted from the base station (AP1) by which the terminal (T) is served;

 - at least one radio-electric or performance parameter of signals transmitted by the base stations (AP2, AP3) received by the terminal (T).

8. Method according to any one of Claims 2 to 7, comprising the temporary exclusion of a set of configuration data from said plurality of configuration data base.

9. Method according to any one of the previous Claims, comprising a preliminary transfer operation, on a terminal (T) of the network (N), of processing programs for performing at least one subset of locating procedures, and of configuration data bases used by the transferred locating procedures, whereby the location estimation is performed by the terminal (T) itself and information about estimated position and estimation accuracy are transmitted from the terminal (T) to a locating system upon every service request.

10. Method according to Claim 9, wherein a synthesis or model of configuration data base is transferred.

11. Method according to Claim 9 or 10, wherein the selection of the set locating procedures that can be performed by a

terminal (T) occurs depending on measures that the terminal (T) is able to perform and/or the required locating accuracy and/or the applied pricing when using the terminal (T).

5   12. Method according to any one of the previous Claims, comprising the operation of creating and maintaining a data base for storing the time succession of estimated positions of a terminal (T).

10   13. Method according to any one of the previous Claims, wherein the locating procedure associated with the combination of a configuration data base related to locating coordinates of the base stations (APn) and possibly the radio-electric characteristics of the network (N), and still

15   possibly the structural/electromagnetic characteristics of the environment in which the network (N) is deployed, with measures related to the identification of the base station (AP1) by which the terminal (T) is served, estimates the position of the terminal (T) corresponding to the barycenter

20   coordinates of the coverage area of said base station (AP1), the uncertainty being defined by the distances from said barycenter to all points of the area.

14. Method according to Claim 13, wherein the locating

25   procedure associated with the combination of a configuration data base related to locating coordinates of the base stations (APn) and possibly the radio-electric characteristics of network (N), and still possibly the structural/electromagnetic characteristics of the environment

30   in which network (N) is deployed, with measures related to the identification of the base station (AP1) by which terminal (T) is served and the identifications of base stations (AP3) received by terminal (T), estimates the

position of terminal (T) corresponding to the barycenter
coordinates of a coverage sub-area of the base station (AP1)
by which the terminal (T) is served comprising the points
nearer to the base stations (AP3) received by the terminal
(T) with respect to unreceived base stations (AP2), the
uncertainty being defined depending on the distances from
said barycenter to all points of the sub-area.

15. Method according to Claim 13, wherein the locating
procedure associated with the combination of a configuration
data base related to locating coordinates of the base
stations (APn) and possibly the radio-electric
characteristics of network (N), and still possibly the
structural/electromagnetic characteristics of the environment
in which network (N) is deployed, with measures related to
the identification of the base station (AP1) by which
terminal (T) is served and at least one radioelectric or
performance parameter of the signal transmitted from said
base station (AP1) and depending on the distance from said
base station (AP1) to terminal (T), estimates the position of
the terminal (T) corresponding to the barycenter coordinates
of a coverage sub-area of said base station (AP1) defined
depending on the distance from said base station (AP1) to the
terminal (T) estimated depending on said parameter, the
uncertainty being defined depending on the distances from
said barycenter to all points of the sub-area.

16. Method according to Claim 14, wherein the locating
procedure associated with the combination of a configuration
data base related to locating coordinates of the base
stations (APn) and possibly the radio-electric
characteristics of network (N), and still possibly the
structural/electromagnetic characteristics of the environment

in which network (N) is deployed, with measures related to
the identification of the base station (AP1) by which
terminal (T) is served, to the identifications of base
stations (AP3) received by terminal (T), to at least one
5   radio-electric or performance parameter transmitted from said
server base station (AP1) and depending on the distance from
said base station (AP1) to terminal (T), and to at least one
radio-electric or performance parameter of the signal
.transmitted from received base stations (AP3) and depending
10 on the distance from said base stations (AP3) to the terminal
(T), estimates the position of the terminal (T) corresponding
to the barycenter coordinates of a coverage sub-area of the
base station (AP1) by which the terminal (T) ' is served
defined depending on the distances from said base stations
15 (AP1, AP3) to the terminal (T) estimated depending on said
parameters, the uncertainty being defined depending on the
distances from said barycenter to all points of the sub-area.

17. Processing system for locating a terminal (T) in a local
20 wireless telecommunications network (N) comprising a
plurality of base stations (APn). that provide services on
respective coverage areas, adapted to provide a location
estimation of the terminal (T), characterised in that it
includes:

25   storage modules (DB) for storing data bases of
configuration data, and of measuring data types indicating
whether the terminal (T) belongs to a subset of said coverage
.areas and acquired from the terminal (7) or the network (N);
and

30   a locating processing module (LM) adapted to associate,
to different combinations of a data base of configurations
and a measuring type, respective locating procedures
corresponding to accuracy value of the location estimation,

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and to perform the procedure related to a selected
combination.

18. Local wireless telecommunications network, comprising a
5   processing system for locating a network terminal (T)
according to Claim 17.

19. Telecommunications network adapted to perform the method
according to Claims 1 to 16.
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20. Computer program product or group of computer program
products that can be executed by a processing system,
comprising one or more code modules for performing a method
for locating a terminal (T) in a local wireless
15   telecommunications network (N) according to any one of Claims
1 to 16.